What is claimed is:

CLAIMS

1.   An apparatus, comprising:

5   an intermediate device comprising protocol sensing circuitry being capable of

determining, at least in part, at least one communication protocol, among a plurality of

communication protocols, via which at least one storage device connected to the

intermediate device is capable of communicating, the intermediate device also

comprising flow control circuitry being capable of controlling a data stream that may be

10   communicated from said storage device using at least one of a plurality of

communication protocols.

2.   The apparatus of claim 1, wherein:

the intermediate device is further capable of detecting a predetermined

initialization signal sequence indicative of a communication protocol.

15   3.   The apparatus of claim 2, wherein:

the predetermined signal sequence comprises an out-of-band signal sequence.

4.   The apparatus of claim 1, wherein:

the protocol detection circuitry is also capable of receiving at least one of an out-

of-band signal sequence and an analog burst signal sequence, and the flow control

20   circuitry comprises data tracking circuitry capable of receiving a data stream from said at

least one storage device and also capable of generating a clock signal indicative of the

frequency of said data stream, said flow control circuitry also comprising retimer

circuitry capable of receiving said data stream and said clock signal and generating a

retimed data stream.

5.   The apparatus of claim 1, wherein:

the intermediate device is capable of being coupled, via at least one cable, to said

storage device.

6.   The apparatus of claim 1, wherein:

5   the plurality of different communication protocols comprise a Fibre Channel

protocol, a Serial Attached Small Computer System Interface protocol, and a Serial

Advanced Technology Attachment protocol.

7.   The apparatus of claim 1, wherein:

the intermediate device is capable of being coupled to a cable compatible with at

10   least one of said communication protocols.

8.   The apparatus of claim 1, wherein:

the intermediate device further comprises protocol control circuitry capable of

receiving a signal from said storage device and, in response at least in part thereto,

generating an acknowledge signal to be transmitted to said storage device.

15 9.   A system, comprising:

a circuit card comprising an integrated circuit capable of communicating in

accordance with a plurality of different communication protocols, the circuit card being

capable of being coupled to a bus, and an intermediate device coupled to said circuit card,

said intermediate device being capable of determining, at least in part, at least one

20   communication protocol, among a plurality of communication protocols, via which at

least one storage device connected to the intermediate device is capable of

communicating, the intermediate device also being capable controlling a data stream

generated by at least one of said integrated circuit and said storage device.

24

10. The system of claim 9, wherein:

the intermediate device is coupled to said circuit card and said storage device via one or more cables.

11. The system of claim 9, wherein:

5   the intermediate device is further capable of detecting a predetermined initialization signal sequence indicative of at least one of said plurality of communication protocols.

12. The system of claim 11, wherein:

the predetermined signal sequence comprises an out-of-band signal sequence.

10   13. The system of claim 9, wherein:

the intermediate device is further capable of controlling said data stream to produce a retimed data stream, and transmitting the retimed data stream to at least one of the circuit card and the storage device.

14. The system of claim 9, wherein:

15   the plurality of different communication protocols comprise a Fibre Channel protocol, a Serial Attached Small Computer System Interface protocol, and a Serial Advanced Technology Attachment protocol.

15. A method, comprising:

determining, at least in part, by an intermediate device at least one communication

20   protocol via which at least one storage device connected to the intermediate device is capable of communicating; and

controlling, at least in part, by the intermediate device, at least one data stream from said at least one storage device in accordance with at least one communication protocol.

16.   The method of claim 15, further comprising:

retiming, by the intermediate device, said at least one data stream generated by said at least one storage device.

17.   The method of claim 15, further comprising:

receiving, by the intermediate device, an initialization signal sequence; and

selecting, by the intermediate device, at least one communication protocol based on said initialization signal sequence.

18.   The method of claim 15, further comprising:

determining, by the intermediate device, a link frequency associated with said storage device; and

communicating, by said intermediate device with said storage device using said link frequency.

19.   The method of claim 15, further comprising:

communicating, by the intermediate device with said at least one storage device with a selected communication protocol among a plurality of communication protocols.

20.   An article comprising:

a storage medium having stored thereon instructions that when executed by a machine result in the following operations:

determining, at least in part, by an intermediate device at least one communication

protocol via which at least one storage device connected to the intermediate device is

capable of communicating; and

controlling, at least in part, by the intermediate device, at least one data stream

5   from said at least one storage device in accordance with at least one communication

protocol.

21.   The article of claim 20, further comprising the following operations:

retiming, by the intermediate device, said at least one data stream generated by

said at least one storage device.

10   22.   The article of claim 20, further comprising the following operations:

receiving, by the intermediate device, an initialization signal sequence; and

selecting, by the intermediate device, at least one communication protocol based

on said initialization signal sequence.

23.   The article of claim 20, further comprising the following operations:

15   determining, by the intermediate device, a link frequency associated with said

storage device; and

communicating, by said intermediate device with said storage device using said

link frequency.

24.   The article of claim 20, further comprising the following operations:

20   communicating, by the intermediate device with said at least one storage device

with a selected communication protocol among a plurality of communication protocols.